R0E53038ACFK30

Converter Board for Connecting R8C/38E, R8C/38F, R8C/38G and R8C/38H Groups
80-pin 0.5mm pitch LQFP

User's Manual

* NQPACK, YQPACK, YQSOCKET, YQ-GUIDE, HQPACK, TQPACK, TQSOCKET, CSSOCKET, CSPLUG/W and LSPACK are trademarks of Tokyo Eletech Corporation.

Notes regarding these materials

1. This document is provided for reference purposes only so that Renesas customers may select the appropriate Renesas products for their use. Renesas neither makes warranties or representations with respect to the accuracy or completeness of the information contained in this document nor grants any license to any intellectual property rights or any other rights of Renesas or any third party with respect to the information in this document.
2. Renesas shall have no liability for damages or infringement of any intellectual property or other rights arising out of the use of any information in this document, including, but not limited to, product data, diagrams, charts, programs, algorithms, and application circuit examples.
3. You should not use the products or the technology described in this document for the purpose of military applications such as the development of weapons of mass destruction or for the purpose of any other military use. When exporting the products or technology described herein, you should follow the applicable export control laws and regulations, and procedures required by such laws and regulations.
4. All information included in this document such as product data, diagrams, charts, programs, algorithms, and application circuit examples, is current as of the date this document is issued. Such information, however, is subject to change without any prior notice. Before purchasing or using any Renesas products listed in this document, please confirm the latest product information with a Renesas sales office. Also, please pay regular and careful attention to additional and different information to be disclosed by Renesas such as that disclosed through our website. (http://www.renesas.com)
5. Renesas has used reasonable care in compiling the information included in this document, but Renesas assumes no liability whatsoever for any damages incurred as a result of errors or omissions in the information included in this document.
6. When using or otherwise relying on the information in this document, you should evaluate the information in light of the total system before deciding about the applicability of such information to the intended application. Renesas makes no representations, warranties or guaranties regarding the suitability of its products for any particular application and specifically disclaims any liability arising out of the application and use of the information in this document or Renesas products.
7. With the exception of products specified by Renesas as suitable for automobile applications, Renesas products are not designed, manufactured or tested for applications or otherwise in systems the failure or malfunction of which may cause a direct threat to human life or create a risk of human injury or which require especially high quality and reliability such as safety systems, or equipment or systems for transportation and traffic, healthcare, combustion control, aerospace and aeronautics, nuclear power, or undersea communication transmission. If you are considering the use of our products for such purposes, please contact a Renesas sales office beforehand. Renesas shall have no liability for damages arising out of the uses set forth above.
8. Notwithstanding the preceding paragraph, you should not use Renesas products for the purposes listed below:
   (1) artificial life support devices or systems
   (2) surgical implantations
   (3) healthcare intervention (e.g., excision, administration of medication, etc.)
   (4) any other purposes that pose a direct threat to human life
   Renesas shall have no liability for damages arising out of the uses set forth in the above and purchasers who elect to use Renesas products in any of the foregoing applications shall indemnify and hold harmless Renesas Technology Corp., its affiliated companies and their officers, directors, and employees against any and all damages arising out of such applications.
9. You should use the products described herein within the range specified by Renesas, especially with respect to the maximum rating, operating supply voltage range, movement power voltage range, heat radiation characteristics, installation and other product characteristics. Renesas shall have no liability for malfunctions or damages arising out of the use of Renesas products beyond such specified ranges.
10. Although Renesas endeavors to improve the quality and reliability of its products, IC products have specific characteristics such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Please be sure to implement safety measures to guard against the possibility of physical injury, and injury or damage caused by fire in the event of the failure of a Renesas product, such as safety design for hardware and software including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other applicable measures. Among others, since the evaluation of microcomputer software alone is very difficult, please evaluate the safety of the final products or system manufactured by you.
11. In case Renesas products listed in this document are detached from the products to which the Renesas products are attached or affixed, the risk of accident such as swallowing by infants and small children is very high. You should implement safety measures so that Renesas products may not be easily detached from your products. Renesas shall have no liability for damages arising out of such detachment.
12. This document may not be reproduced or duplicated, in any form, in whole or in part, without prior written approval from Renesas.
13. Please contact a Renesas sales office if you have any questions regarding the information contained in this document, Renesas semiconductor products, or if you have any other inquiries.

CAUTION If the requirements shown in the "CAUTION" sentences are ignored, the equipment may cause personal injury or damage to the products.

Renesas Tools Homepage http://www.renesas.com/tools

Rev.1.00
Jun. 26, 2008
REJ10J1898-0100

RenesasTechnology
www.renesas.com

1. Outline

The R0E53038ACFK30 is a converter board for connecting the signals of the MCU unit R0E521300MCU00 for R8C/Tiny Series to a foot pattern for 80-pin 0.5mm pitch LQFP of R8C/38E, R8C/38F, R8C/38G and R8C/38H Groups.

2. Package Components (See Figure 1)

Check to see if the R0E53038ACFK30 package has all the following contents before using this product.

(1) R0E53038ACFK30 converter board ..... 1 pc.
(2) YQPACK080SD (made by Tokyo Eletech Corporation)..... 1 pc.
(3) NQPACK080SD-ND (made by Tokyo Eletech Corporation)... 1 pc.
(4) YQ-GUIDE (made by Tokyo Eletech Corporation) .....4 pcs.
(5) R0E53038ACFK30 User's Manual (this manual)

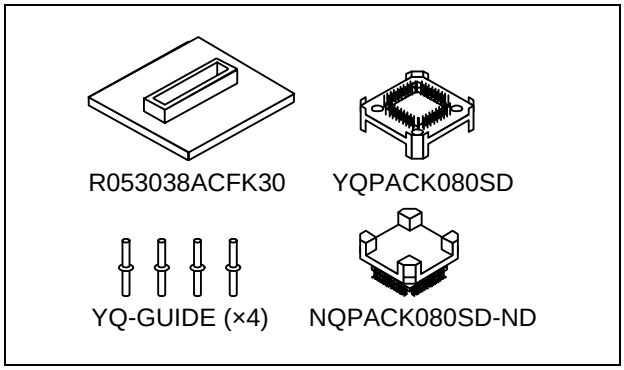

Figure 1 Package components of the R0E53038ACFK30

3. Specifications

Table 1 Specifications

Applicable package	PLQP0080KB-A: formerly 80P6Q-A (80-pin 0.5mm pitch LQFP)
Insertion/removal iterations of connector	50 times guaranteed

4. Usage (See Figure 2)

The R0E53038ACFK30 can be used for debugging and on-board evaluation in common by mounting the NQPACK080SD-ND on the user system.

(1) For debugging
Mount the NQPACK080SD-ND on the foot pattern of the user system and attach the YQPACK080SD on it. In addition, connect the R0E53038ACFK30 to the YQPACK080SD, and then connect the flexible cable R0E001000FLX10 of the emulator to the upper connector of the R0E53038ACFK30.

(2) For on-board evaluation
Mount an MCU with on-chip flash memory or one-time PROM and the HQPACK080SD (not included) in order on the NQPACK080SD-ND on the user system.

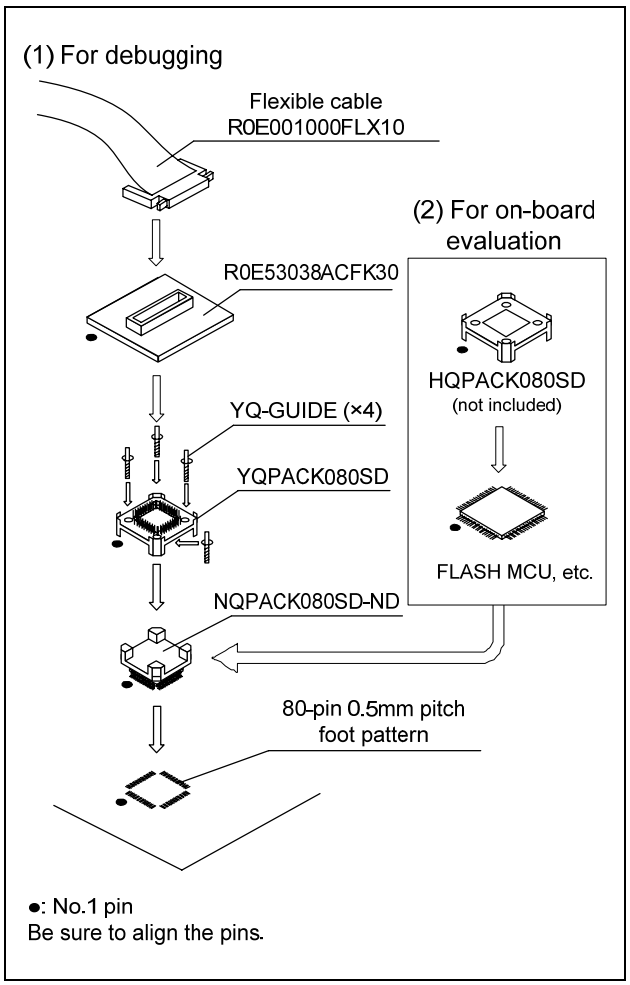

Figure 2 Usage of the R0E53038ACFK30

Before using the R0E53038ACFK30, be sure to read "7. Precautions" on page 4.

5. Connection Procedure (See Figure 3)

The procedure for connecting the R0E53038ACFK30 is shown below.

(1) Mount the NQPACK080SD-ND on the user system.

(2) Attach the YQPACK080SD on the NQPACK080SD-ND.

(3) Secure the four corners of the YQPACK080SD with the YQ-GUIDEs.

> ● **Do not use the screws included with the YQPACK080SD for fixing the YQPACK080SD.**
>
> ● **Do NOT use the screwdriver included with the NQPACK080SD-ND for fixing the YQ-GUIDEs. That is used only for the HQPACK080SD.**

(4) Mount the R0E53038ACFK30 on the YQPACK080SD.

(5) Connect the flexible cable R0E001000FLX10 of the emulator to the R0E53038ACFK30.

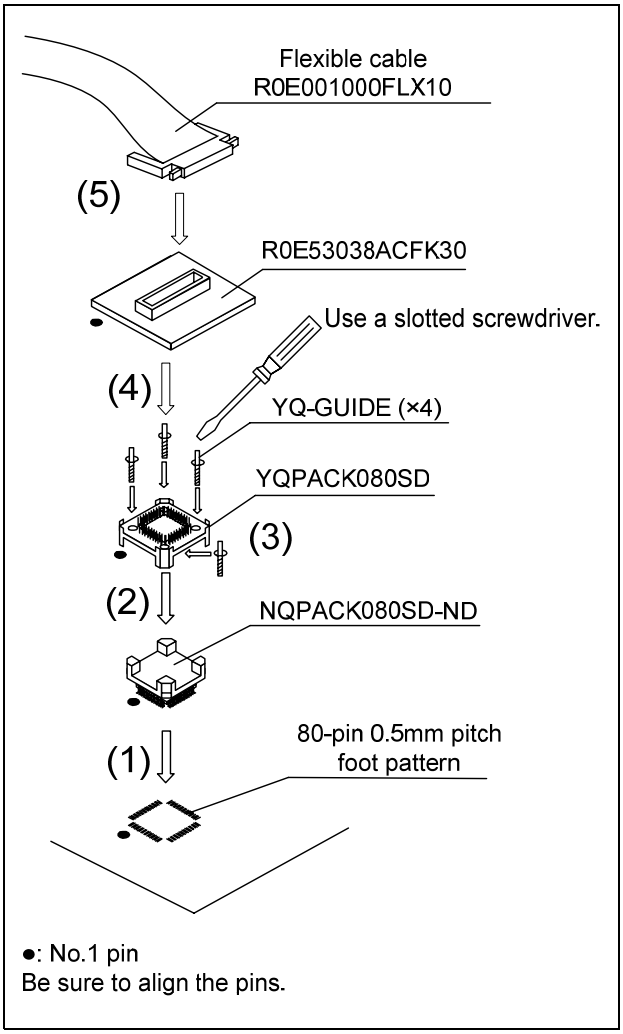

Figure 3 Connection procedure of the R0E53038ACFK30

6. External Dimensions and a Sample Foot Pattern

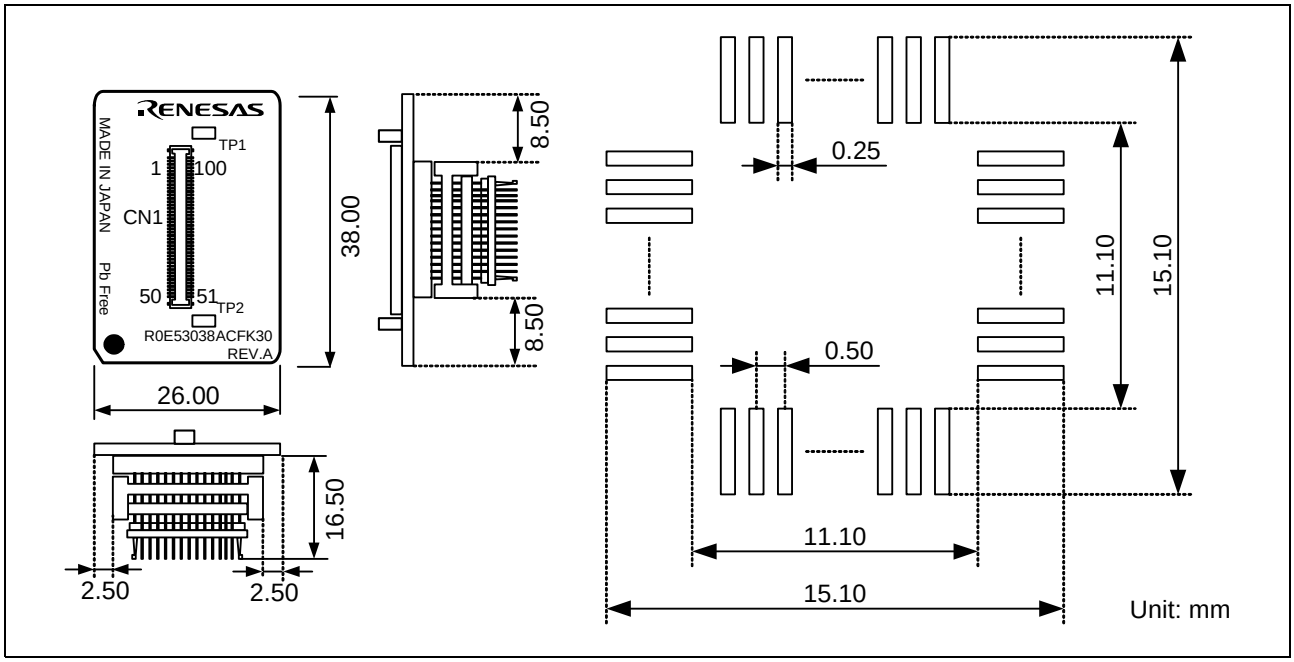

Figure 4 External dimensions and a sample foot pattern of the R0E53038ACFK30

7. Precautions

⚠ CAUTION

Cautions to Be Taken for This Product:

- When connecting the YQPACK080SD, be sure to use the included YQ-GUIDEs.
- Do NOT use the screws included with the YQPACK080SD for connecting the YQPACK080SD.

IMPORTANT

Notes on This Product:

- We cannot accept any request for repair.
- For purchasing the NQPACK080SD-ND, YQPACK080SD, HQPACK080SD, contact the following:
  Tokyo Eletech Corporation http://www.tetc.co.jp/e_index.htm
- For inquiries about the product or the contents of this manual, contact your local distributor.
  Renesas Tools Homepage http://www.renesas.com/tools

8. Correspondence of Connectors CN1

Table 2 Correspondence of the connectors

CN1 Pin No.	IC1	CN1 Pin No.	IC1
1	-	100	-
2	-	99	-
3	-	98	-
4	-	97	-
5	51	96	50
6	52	95	49
7	53	94	48
8	54	93	47
9	55	92	46
10	56	91	45
11	57	90	44
12	58	89	43
13	59	88	42
14	60	87	41
15	-	86	-
16	61	85	40
17	62	84	39
18	63	83	38
19	64	82	37
20	65	81	36
21	66	80	35
22	67	79	34
23	68	78	33
24	69	77	32
25	70	76	31
26	-	75	-
27	71	74	30
28	72	73	29
29	73	72	28
30	74	71	27
31	75	70	26
32	76	69	25
33	77	68	24
34	78	67	23
35	79	66	22
36	80	65	21
37	-	64	-
38	1	63	20
39	2	62	19
40	3	61	18
41	4	60	17
42	5	59	16
43	6	58	15
44	7	57	14
45	8	56	13
46	9	55	12
47	10	54	11
48	-	53	-
49	-	52	-
50	-	51	-

(-: No connection or signals in the emulator)